



KERALA SAMAJAM MODEL SCHOOL

Computer Science Project for STD X

Question 1:

Create a class to calculate the Taxi fare. Following are the methods in the class to perform various tasks.

Data Member: km(int)- to store the distance traveled.

void take() – Accept the distance traveled.

void calculate() – Calculate the fare by the following conditions.

Distance	Rate/km
First 5	50 Rs.
Next 5	Rs.5/km
Next 5	Rs. 4/km
Above	Rs. 3/km

An additional charge of 12% as service charge will be added with every bill.

void display() – Display the total Kilometer traveled and Amount to be paid by the passenger separately.

Question 2:

A class Phone calculates the monthly phone bill of a consumer. Some of the members of the class are given below:

Class Name: Phone

Data Members:

phsssno – Phone Number

name – Name of the consumer

no – Number of calls

amt – Bill amount

Member Functions:

Phone () – Parameterized Constructor to initialize values to data members.

void compute () – to calculate the phone bill amount based on the slabs given below.

NUMBER OF CALLS

RATE

1 – 100

Rs 360 Rental Charge only

101 – 200

Re. 1 per Call + Rental Charge

201 – 400

Rs. 1.20 per Call + Rental Charge

Above 400

Rs. 1.50 per Call + Rental Charge

void display () – to display the details in the following specified format :

Phone No.	Name	Total Calls	Bill Amount
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Write a main method in java to create an object of a class and call the above member methods.



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Question 3:

Write a menu driven program in java to accept a number from the user and check whether it is a Duck Number Neon Number.

Duck Number: A number is said to be Duck if the digit zero is present in it.

Neon Number: A number is said to be Neon if sum of the digits of the square of a number is equal to the number itself.

Question 4:

Write a program to store 10 names in an array. Arrange these in alphabetical order by sorting. Print the sorted list. Take single word names, all in capital letters.

e.g. SUMAN, AJAY, JENNY etc.

Question 5:

Create a class to store names of 10 state and their capitals in two separate single dimension array. Ask user to enter the state name to display the capital by searching technique.

Question 6:

Define a class to enter a complete name and print its initials in the given format.

Eg. Kapil Dev Ram Lal Nikhanj

Output: Mr. K. D. R. L. Nikhanj

Question 7:

Binomial co-efficient can be calculated by using the following formula:

$${}^n C_m = \frac{n!}{m!(n-m)!} \quad [\text{where ! sign represents the factorial of a number}]$$

Create a class in java to calculate and print the binomial co-efficient of the given expression, taking the value n and m as input. Make use of the function int fact(int k), which returns the factorial of a number k.



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Question 8:

Fibonacci series is a series of numbers in which each number is the sum of two preceding numbers, the first two numbers being 0 and 1. Write a function **FIBO(int n)** that takes a number as argument and generate the series that are not greater than the argument.

Eg. 0, 1, 1, 2, 3, 5, 8.....

Call the above function FIBO() from main() method and display the result.

Question 9:

A man has written a statement as “MY NAME IS TAMAL KUMAR GHOSH AND MY AGE IS 25 YEARS”. Later on he realized that he had declared the name as TAMAL instead of AMAL and the age 25 instead of 35 . Create a class in java to correct the name and age in the above statement and display the output as “MY NAME IS AMAL KUMAR GHOSH AND MY AGE IS 35 YEARS”.

Question 10:

Write methods in java to perform the following (using switch case):

[15]

i) to print the value of S where

$$S = 1/1! + (1 + 2) / (1! + 2!) + (1 + 2 + 3) / (1! + 2! + 3!) + \dots \text{ up to } n \text{ terms.}$$

ii) to print the value of S where

$$S = 1^n + 2^{(n-1)} + \dots + (n-1)^2 + n^1$$